CHAPTER 8

SPECIAL SURFACE TREATMENTS AND SPECIAL DETAILS

8-1. General. This section covers surface treatments for improvement of skid resistance, reduction of hydroplaning tendency, and resistance to fuel spillage.

8-2. Surface treatment for improved skid resistance. Improved skid resistance and the elimination of the tendency to hydroplane may be accomplished by proper drainage and proper aggregate selection or by application of a porous friction course or by grooving the pavement surface. These surface treatments are applicable to runways and high speed taxiways.

8-3. Porous friction surface course. Porous friction surface course consists of an open graded bituminous concrete containing a large proportion of one-sized coarse aggregate. The large void content permits water to drain through the layer laterally out to the shoulders. Porous friction courses are also described as "open graded mix," "plant mix seal," and "popcorn mix." In addition to improving skid resistance and preventing hydroplaning, porous friction courses provide the following additional advantages:

- Improved visibility of pavement marking.

- Reduced tire splash and spray.

Some disadvantages include:

- Susceptibility to fuel spills.

- Susceptibility to clogging by mud, blow sand, and rubber.

8-4. Prior preparation. Porous friction courses and grooving should only be applied to structurally adequate sections capable of supporting existing and future aircraft traffic. The pavement surface should be checked for proper surface drainage; transverse grades should be a minimum of 1 percent. Pavements which are understrength, have insufficient slope for drainage, contain depressed areas, or are cracked, should be strengthened and should have deficiencies corrected prior to applying a porous friction course or grooving.

8-5. Fuel resistant surfacings. Jet fuel-resistant bituminous surfacings may be used in new construction, where expedient, or as overlays. See appendix A for criteria on fuel resistant rubberized-tar mixes. Design fuel resistant flexible pavement as outlined in chapter 7 for conventional pavement, except that the surface will consist of a tar or asphalt binder topped with a minimum of 1-1/2 inches of rubberized tar wearing course. Joints

in the wearing course are particularly critical and care must be taken in bonding the joints to prevent leakage which would result in deterioration of the asphalt below.

8-6. Fuel resistant seal coat. Structurally adequate asphaltic pavements in good condition subject to fuel spillage may be protected by a rubberized-tar slurry seal. Rubberized-tar slurry seal provides a fine grained, slippery surface which is resistant to fuel spillage. Because of the slippage surface imparted by this type seal, it is not to be used on runways and taxiways.

8-7. Juncture between rigid and flexible pavements. Experience has shown that objectionable roughness often develops at the juncture of a rigid and flexible pavement under aircraft traffic. This roughness generally takes the form of subsidence or shoving. For details on this juncture, see EM 1110-3-142.